



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,050	06/15/2005	Juha Salmivaara	0365-0629PUS1	7392
2292	7590	04/20/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			MULL, FRED H	
PO BOX 747			ART UNIT	
FALLS CHURCH, VA 22040-0747			PAPER NUMBER	
			3662	

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/539,050	SALMIVAARA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Fred H. Mull	3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:

It is standard US practice to include section headings such as "Background of the Invention" and "Summary of the Invention", and "Brief Description of the Drawings" in the specification.

Appropriate correction is required.

### ***Claim Objections***

2. Claim(s) 3 and 6 is/are objected to under 37 CFR 1.75. The claim(s) recites the limitation "the vertical beam" in line 2. There is insufficient antecedent basis for this limitation in the claim. Correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In line 4, the claim states "an input signal" is being fed to antenna elements. Then in line 7, the claim states that "the signals" are being feed to the antenna elements.

The examiner suggest rephrasing lines 5-6 to something similar to:

--the phase of the input signal is adjusted for each of the antenna elements to produce adjusted signals in order to point the beam of the profiler--  
and in line 7 changing "the signals" to --the adjusted signals--.

4. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In line 4, the claim states "a signal" is being fed to antenna elements. Then in line 7, the claims states that "the signals" are being feed to the antenna elements.

The examiner suggests rephrasing lines 5-7 along the lines given with regard to claim 1 above.

5. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that claim 4 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in the specification, p. 1, lines 20-22. In that paper, applicant has stated "The goal of the invention is accomplished by using separate feeder lines for each beam direction for feeding the signals to the antenna elements." (emphasis added), and this

Art Unit: 3662

statement indicates that the invention is different from what is defined in claim 4 because the claim fails to recite this feature. Note that while claim 1, line 7 states "separate feeder lines for each beam direction" (emphasis added), claim 4, line 7 only states "separate feeding means" without indicating that they are for each beam direction.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over IDS document Chintawongvanich in view of one of Caballero and Lorch Microwave.

In regard to claim 4, Chintawongvanich discloses:

an electromagnetic wind profiler (abstract) comprising a stationary antenna matrix (12) with several individual antenna elements (21) which apparatus comprises means for feeding a signal to the antenna elements (16),  
means for adjusting the phase differences between the individual antenna elements, and separate feeding means are used for feeding the signals to the antenna elements (col. 7, lines 58-62; col. 8, line 66 to col. 9, line 25; col. 9, line 57 to col. 10, line 17).

Chintawongvanich further discloses that such wind profilers can be acoustic or radiowave (col. 1, lines 36-37; col. 2, lines 45-62), where the choice depends, among other thing, on what height the measurement to be made is.

Chintawongvanich fails to disclose using a phase controlling means that are hybrid coupler elements.

As disclosed by Chintawongvanich, sometimes measurements are to be made above 1 km, and in that situation is known to use a device with radiowave beams (col. 1, lines 36-37; col. 2, lines 45-62). When radiowave beams are to be used, radiowave array phase shifters would have to be used.

Caballero (18, Fig. 4; col. 5, lines 14-17) and Lorch Microwave (p. 1, 1<sup>st</sup> ¶; Fig. 1) disclose that hybrid coupler elements are microwave phase shifters.

It would have been obvious to use a radiowave version of the wind profiler for measuring wind profiles at greater than 1 km based on Chintawongvanich's teaching that radiowave profilers work better at heights greater than 1 km (col. 1, lines 36-37; col. 2, lines 45-62), and to use the appropriate phase shifters for such a device, which are hybrid coupler elements, as taught by Caballero (18, Fig. 4; col. 5, lines 14-17) and Lorch Microwave (p. 1, 1<sup>st</sup> ¶; Fig. 1).

In regard to claim 5, Caballero (18, Fig. 4; col. 5, lines 14-17) and Lorch Microwave (p. 1, 1<sup>st</sup> ¶; Fig. 1) further discloses that the hybrid coupler elements are 90 degree hybrid couple elements and Chintawongvanich further discloses that the phase shifts create four beams in different directions (#1, #2, #3, #4, Fig. 7; col. 7, lines 58-62; col. 8, line 66 to col. 9, line 25; col. 9, line 57 to col. 10, line 17).

***Allowable Subject Matter***

7. Claim(s) 1-3 and 6 would be allowable if amended to overcome the objections and rejection(s) under 35 U.S.C. 112, 2<sup>nd</sup> set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

8. The following is an examiner's statement of reasons for allowance:

With regard to independent claim 1, the closest prior art, Chintawongvanich, do(es) not teach or make obvious the following limitation(s):

separate feeder lines for each beam direction are used for feeding the signals to the antenna elements.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 571-272-6975. The examiner can normally be reached on Monday through Friday from approximately 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 571-272-6979. The fax phone

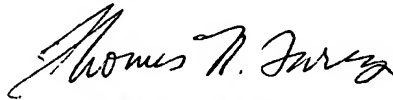
Art Unit: 3662

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred H. Mull  
Examiner  
Art Unit 3662

fhm

  
THOMAS H. TARCZA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600